

# NASA TECH BRIEF



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## Electroless Nickel Plating on Stainless Steels and Aluminum

### The problem:

To develop effective procedures for applying an adherent electroless nickel plating on 303SE, 304, and 17-7PH stainless steels, and 7075 aluminum alloy. Plating with electroless nickel (a chemical reduction process for depositing a coating of nickel-phosphorus alloys without the use of electric current) requires special cleaning of the parts and precise process control for each type of metal to be plated.

### The solution:

Detailed procedures for plating these metals with electroless nickel may be obtained by writing to:

Technology Utilization Officer  
Goddard Space Flight Center  
Greenbelt, Maryland 20771  
Reference: B66-10479

### Notes:

1. When heat treated, the electroless nickel plating provides a hard surface coating on a high strength, corrosion resistant substrate. This coating provides the antigalling characteristics of the electroless nickel and enhances the solderability of the substrate stainless steel or aluminum alloys.
2. Two basic papers on electroless nickel plating are: (1) "Deposition of Nickel and Cobalt by Chemical Reduction", Abner Brenner and Grace Riddell, National Bureau of Standards Research Paper RP1835, vol. 39, November 1943, and (2) "Electroless Plating Comes of Age", Abner Brenner, *Metal Finishing*, November-December 1954.

### Patent status:

No patent action is contemplated by NASA.  
Source: General Electric Company  
under contract to  
Goddard Space Flight Center  
(GSFC-533)

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